CLAIMS

What is claimed is:

1. (canceled): A method for inserting at least one conductor into an elongated length of metal coiled tubing, comprising the steps of:

(a) placing the coiled tubing in a substantially vertical passageway;

(b) inserting said conductor into the tubing, the leading end of the conductor including an elongated weight connected to the conductor, which weight is heavy enough to straighten the conductor enough to fall through the tubing, the weight having essentially no stiffness so that it is flexible enough to move through bends or irregularities in the tubing;

(c) allowing the conductor and weight to fall by gravity through the tubing, which has a sufficient helical pitch providing a hold-up force due to friction for preventing the conductor from breaking, until the desired length of conductor is inserted in the tubing; and

(d) removing the tubing with the conductor inside the tubing from the passageway and winding the tubing on a reel.

2. (canceled): The method of claim 1, wherein the step of inserting a conductor includes inserting one or more insulated electrical conductor wires.

3. (canceled): The method of claim 1, wherein the step of inserting a conductor includes inserting one or more optical fibers.

4. (canceled): The method of claim 1, wherein the step of inserting a conductor includes inserting a combination of insulated conductor wires and optical fibers.

5. (canceled): The method of claim 1, wherein the step of placing the coiled tubing includes the step of inserting at least a 1,000 ft. length of coiled tubing into a subterranean well bore.

6. (canceled): The method of claim 5, wherein the step of placing the coiled tubing includes the step of inserting coiled tubing that has an outer diameter of 1/8"-1/2".

7. (canceled): The method of claim 5, and further including the steps of disconnecting the tubing from a reel mounted on a truck and connecting the coiled tubing to the truck.

8. (canceled): The method of claim 1, wherein the step of inserting the conductor includes the step of connecting a weight having an elongated segmented structure to the leading end of the conductor and inserting the weight into the tubing.

9. (canceled): The method of claim 8, wherein the weight is formed of a chain having interconnected links.

10. (canceled): The method of claim 9, wherein the chain is roll-formed and has a minimum bend radius.

11. (canceled): The method of claim 10, wherein the chain has minimum bend radius of about 1/4"-24".

12. (canceled): The method of claim 1, wherein the step of allowing the conductor and weight to fall by gravity includes the step of regulating the tension in the tubing so as to regulate the pitch of the helical shape of the tubing so that the frictional hold-up force between the outer surface of the conductor and the inner surface of the tubing is sufficient for the conductor to support its own weight in the tubing.

13. (canceled): The method of claim 12, wherein the step of regulating the tension in the tubing includes the step of moving a truck to which the coiled tubing is connected.

14. (canceled): The method of claim 1, wherein the step of allowing the conductor and weight to fall by gravity further includes the step of controlling the speed the conductor is allowed to fall.

15. (canceled): The method of claim 14, wherein the step of controlling the speed includes the steps of operatively connecting a reduction gear motor to the reel from which the conductor unwinds and operating the motor at a predetermined speed.

16. (canceled): The method of claim 1, wherein the step of inserting the conductor into the tubing includes the step of pushing the weight into the tubing until the weight can fall vertically through the tubing.

17. (canceled): The method claim 16, wherein the step of pushing the weight includes the step of pushing the weight around at least one 90.degree. bend in the tubing.

18. (canceled): The method of claim 16, wherein the step of pushing includes the step of engaging the weight between a pair of rollers, and rotating at least one of the rollers for moving the weight through the tubing.

19. (canceled): A method for inserting at least one insulated electrical conductor wire into a length of small-diameter coiled tubing extending substantially vertically in a subterranean well, said tubing having an inner diameter less than about two-times the diameter of the conductor wire, comprising the steps of:

(a) connecting a weight to the leading end of the conductor wire, said weight being formed of a segmented structure having essentially no stiffness and being heavy enough to maintain the conductor straight enough to fall by gravity through the tubing;

(b) inserting the weight into the tubing and allowing the weight and conductor to fall by gravity through the tubing; and

(c) maintaining a helical pitch in the tubing sufficient to impart a frictional hold-up force between the outer surface of the conductor and the inner surface of the tubing for preventing the conductor from breaking due to its own weight.

20. (canceled): The method of claim 19, wherein the step of connecting a weight

includes connecting a weight formed of a chain having interconnected links.

21. (canceled): The method of claim 20, wherein the step on connecting a weight includes connecting a roll-formed chain with a minimum bend radius.

22. (canceled): The method of claim 21, wherein the step of connecting a weight includes connecting a roll-formed chain with a minimum bend radius of about 1/4"-24".

23. (canceled): The method of claim 19, wherein the step of maintaining a helical pitch includes the step of regulating the tension in the tubing.

24. (canceled): The method of claim 23, wherein the step of regulating the tension includes the step of moving a truck to which the coiled tubing is connected.

25. (new): A conductive wire line comprising:

a small diameter tubing having an outer diameter and an inner diameter, the tubing having an outer diameter between 1/8"-1/2"; and

one or more optical fibers extending through the inner diameter of the tubing, the one or more optical fibers having a helical configuration inside the tubing so that the one or more optical fibers have a length longer than the tubing in which the one or more optical fibers extend.

26. (new): The conductive wire line of claim 25, further including one or more insulated conductor wires extending along the inner diameter of the tubing.

27. (new): The conductive wire line of claim 26, wherein the one or more insulated conductor wires have a helical configuration inside the tubing so that the one or more insulated conductor wires have a length longer than the tubing in which the one or more insulated conductor wires extend.

28. (new): The conductive wire line of claim 25, wherein the tubing is at least 1,000 ft. in length.

29. (new): The conductive wire line of claim 26, wherein the tubing has an inner diameter less than about two-times the diameter of the one or more insulated conductor wires.

30. (new): The conductive wire line of claim 25, wherein the tubing is formed of stainless steel.

31. (new): The conductive wire line of claim 25, wherein the tubing is formed of a nickel alloy or stainless steel.

32. (new): The conductive wire line of claim 25, wherein the tubing is coiled tubing.

33. (new): The conductive wire line of claim 25, wherein the one or more optical fibers inside the tubing is supported through frictional interface between an outer surface of the one or more optical fibers and an inner surface of the tubing.